

DESCRIPTION

The ESD5302F is an ultra-low capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. with typical capacitance of 0.2pF (, /o to , /o) only, is designed ESD5302F to protect parasitic-sensitive systems against over-voltage and over-current transient events. ,t complies with ,EC 61000-4-2 (ESD), Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), ,EC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

The ESD5302F uses small SoT-23 package. Each

The ESD5302F device can protect two high-speed data lines. The combined features of low capacitance, small size and high ESD robustness make ideal for high-speed data port ESD5302F is a and high-frequency line applications. The low clamping voltage of the guarantees a ESD5302F is a minimum stress on the protected ,C.

FEATURES

- ◇ Transient protection for high-speed data lines
 - ,EC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Air)
 - $\pm 8\text{kV}$ (Contact)
- ,EC 61000-4-4 (EFT) 40A (5/50 ns) Cable Discharge Event (CDE)
- ◇ Small package (2.9mm×2.4mm×1.0mm)
- ◇ protects two data lines
- ◇ Low capacitance: 0.2pF Typical (, /o-, /o)
- ◇ Low leakage current
- ◇ Low clamping voltage

MACHANICAL DATA

- ◇ SoT-23 package
- ◇ Flammability Rating: UL 94V-0
- ◇ packaging: Tape and Reel
- ◇ High temperature soldering guaranteed: 260/10s
- ◇ Reel size: 7 inch

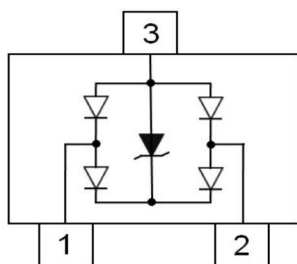
ORDERING INFORMATION

- ◇ package: SoT-23
- ◇ Marking: 52L
- ◇ Material: Halogen free
- ◇ packing: Tape & Reel
- ◇ Quantity per reel: 3,000pcs

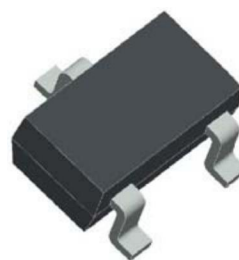
APPLICATIONS

- ◇ SerialATA
- ◇ Desktops, Servers and Notebooks
- ◇ pC, Express
- ◇ MDD, ports
- ◇ USB Data Line protection
- ◇ Display ports
- ◇ Digital Visual ,nterfaces (DV,)

PIN CONFIGURATION



PACKAGE OUTLINE

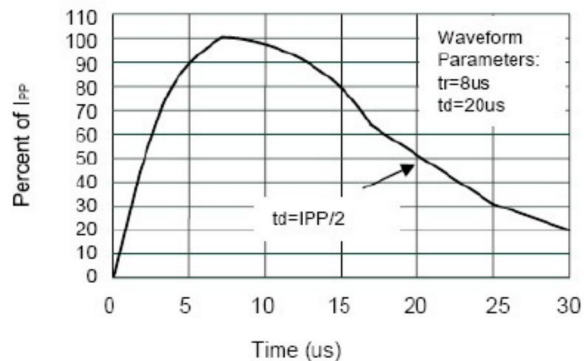


ABSOLUTE MAXIMUM RATING

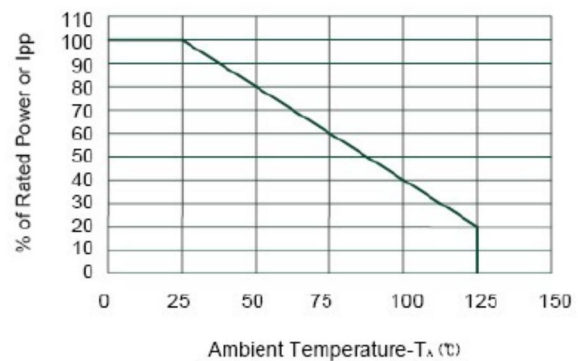
symbol	parameter	value	Units
P_{PP}	peak pulse power (8/20 μ s)	60	W
V_{ESD}	ESD per ,EC 61000-4-2 (Air) ESD per ,EC 61000-4-2 (Contact)	± 20 ± 20	kV
T_{opT}	operating Temperature	-55/+125	°C
T_{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25 °C)

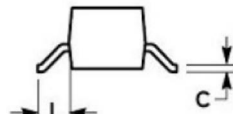
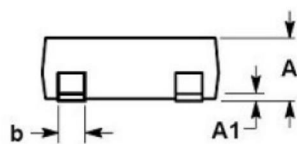
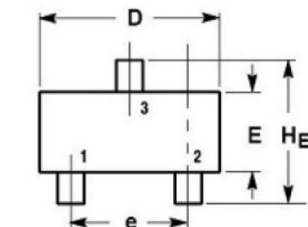
symbol	parameter	Test Condition	Min	TyP	Max	Units
V_{RWM}	Reverse Working Voltage	,/o to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$ Between ,/o and GND	6.0			V
I_R	Reverse Leakage Current	$V_{RWM} = 5V$ Between ,/o and GND			100	nA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$ Between ,/o and GND			10	V
		$I_{PP} = 4A, t_p = 8/20\mu s$ Between ,/o and GND			15	V
V_F	Forward Voltage	$I_T = 10mA$ Between ,/o and GND			1.2	V
C_T	Total Capacitance	$V_R = 0V, f = 1MHz$ Between ,/o and GND		0.4		pF
		$V_R = 0V, f = 1MHz$ Between ,/o and ,/o		0.2		pF

ELECTRICAL CHARACTERISTICS CURVE


Pulse Waveform



Power Derating Curve

SOT-23 PACKAGE OUTLINE DIMENSIONS


DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104